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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,656

04/04/2006

Sang Ik Lee

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EXAMINER

RAHIM, AZIM

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

09/23/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,656	Applicant(s) LEE ET AL.	
	Examiner AZIM RAHIM	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-20 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-20 and 23-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/17/2010 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko (US 6,286,326) in view of Kim et al. (Kim, US 5,987,904) and Chung (US 5,156,015).

Art Unit: 3744

Regarding claims 1 and 7, Kopko discloses a refrigerator arrangement (referring to figure 2) comprising: a duct (59) in fluid communication with a freezer compartment (55) and a fresh-food compartment (56) via flaps (53, 54, 57, and 58) disposed adjacent to both of said compartments (illustrated in figure 2); wherein the duct includes an evaporator/refrigerant pipe assembly (52) and reversing fan (51) capable of moving air in two directions, thus opening and closing a first set of flaps (53 and 54) when the fan moves air in one direction and closing the first set of flaps when the fan moves air in another direction opposite the first direction (see column 4, lines 23-40; the fan blows air to the right and to the left, depending on the direction of rotation of the fan). Also, Kopko further discloses that if the fan blows air away from the evaporator, flaps 53 of the freezer compartment will close off the freezer compartment to the space, and the space will be closed off to the freezer compartment (see column 4, lines 23-40). It is noted that the operation of the reversing fan is indicative that some type of driving means (i.e. a motor) controls the rotation of the fan. Also, it is noted that the recitations “so that the opening or closing between the space and the refrigerating chamber and the space and the freezing chamber are performed by the open/close device,” “so that the cold air is directed into the refrigerating chamber and /or the freezing chamber during cooling,” and “so that a heat transmission from the defrosting heater to the refrigerating chamber and/or freezing chamber is prevented during defrosting by an operation of the defrosting heater” are merely statements of intended use and lends no additional structure to the claimed invention, and the applicant is reminded that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here. However, Kopko fail to disclose a defrost

Art Unit: 3744

heater positioned within the duct; and that both the first and second open/close devices open the space to both the refrigerator and freezer compartment when the fan rotates in one direction and both the first and second open/close devices closes the space when the fan is rotated in the opposite direction. Kim teaches a refrigerator (referring to figure 3) that includes an evaporator (11), a fan (15), and a defrost heater (17) disposed within a duct (illustrated in figure 3), wherein the defrost heater is selectively operated in a defrost operation (see column 1, lines 55-58).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the refrigerator of Kopko to include the defrost heater as taught by Kim in order to prevent excess frost buildup on the evaporator, thus preventing the reduction in cooling efficiency due to the frost buildup. The general concept of designing a refrigerator to have a freezer compartment disposed above a refrigerator compartment and having airflow that flows from a space to both the refrigerator compartment and freezer compartment in series falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Chung which teaches a refrigerator (referring to figure 1) having a freezer compartment (2) disposed above a refrigerator compartment (3) and having airflow (see arrows) that flows from a space (5) to both the refrigerator compartment and freezer compartment in series (illustrated in figure 1: via port 7), and one having ordinary skill in the art would have been motivated to include the use of a refrigerator of this configuration in order to make the refrigerator portable and fit in confined spaces. Conceptually, is noted that given the refrigerator arrangement of Chung, the fan, and flaps 57 & 58 of Kopko would be placed in respective locations (i.e. the area of fan 6A and directly upstream of evaporator 4 where ports 9 and 9A join of Chung) in Chung.

Art Unit: 3744

Regarding claim 8, Kopko as modified by Kim and Chung teach all the limitations as described above, but fail to explicitly teach that the defrost heater is positioned between the fan and the evaporator. Although Kim is deficient in disposing the defrost heater between the evaporator and the fan, at the time the invention was made, it would have been an obvious matter of design choice to a person having ordinary skill in the art to dispose the defrost heater between the evaporator and the fan, because the Applicant has not disclosed that disposing the defrost heater between the evaporator and the fan provides a particular advantage, is used for a particular purpose, or solves a stated problem. One having ordinary skill in the art, furthermore, would have expected Kim's defrost heater disposition, and Applicant's invention to perform equally well with either the defrost heater disposition as taught by Kim and defrost heater being disposed between the fan and evaporator because both defrost heater dispositions would perform the same function of heating the evaporator during defrost operation. Therefore, it would have been a prima facie case of obviousness to modify Kim to obtain the invention as specified in claim 8 because such a modification would have been considered a mere design choice which fails to patentably distinguish over the prior art of Kim. Furthermore, one of ordinary skill in the art would have been motivated to dispose the defrost heater between the evaporator and the fan in order to provide a more compact arrangement within the duct, thus providing more space for additional items.

4. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim and Chung as applied to claim 2 above, and further in view of Reed (US 2,191,774).

Art Unit: 3744

Regarding claims 3-6, Kopko as modified by Kim and Chung teach all the limitations as described above, but fail to teach that the flaps comprise a supporting plate having a plurality of openings; a plurality of thin rotating plates each having one side coupled to the supporting plate by a hinge, and the other side rotatable upward by a predetermined angle to open the openings; wherein the rotating plate covers an upper circumference of the respective opening to close the opening; and wherein the rotating plate is held by a rear end of an adjacent rotating plate and the supporting plate to prevent the plate from rotating downward. Reed teaches a vane assembly (referring to figure 1) that includes a plurality of vanes (11) disposed downstream of a vent (1) and connected to a tie rod (14) via an axis (12) and a lever (13); wherein openings between the vanes are created when a predetermined amount of air is sucked through the vanes (illustrated in figure 1 and see column 2, lines 37-55), and when the vanes are closed, a portion of the vanes can lie onto an adjacent vane (see column 3, lines 51-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced the flaps of Kopko as modified by Kim and Chung to include the vane assembly as taught by Reed in order to provide increased directing of airflow, thus reducing air turbulence within the duct.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim as applied to claim 1 above, and further in view of Block (US 2002/0192075).

Regarding claim 9, Kopko as modified by Kim and Chung teach all the limitations as described above, but fail to teach that the defrost heater is fabricated as one unit with the fan. Block teaches the well known concept of providing a heating element on a fan for delivering hot fluid (see figure 1 and paragraph 21). It would have been obvious to one having ordinary skill in

Art Unit: 3744

the art at the time the invention was made to have modified the reversing fan of Kopko as modified by Kim and Chung to include the heating elements as taught by Block in order to provide more warm air to be blown to the evaporator for defrosting purposes, thus reducing the amount of heat needed to melt the frost.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim and Chung as applied to claim 1 is above, and further in view of Carlstedt et al. (Carlstedt, US 5,765,384).

Regarding claim 10, Kopko as modified by Kim and Chung teach all the limitations as described above, but fail to teach a hot wire that functions as a resistance body connected to a power source for emission of heat; and a film of an electrical insulating material surrounding the hot wire. Carlstedt et al. teach the concept of providing an evaporator (10) having an electric cable (20) for defrosting the evaporator (see abstract); wherein electric current is conducted through a resistance wire (24; see column 2, lines 3-5), having a thin film (insulation 26) surrounding the resistance wire (illustrated in figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the refrigerator of Kopko as modified by Kim and Chung to include the defrost heater as taught by Carlstedt order to prevent ice buildup on the evaporator from clogging the cold air duct, thus increasing cooling efficiency.

Art Unit: 3744

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim as applied to claim 1 is above, and further in view of Schenk et al. (Schenk, US 6,694,754).

Regarding claim 11, Kopko as modified by Kim and Chung teach all the limitations as described above, but fail to disclose a plurality of fins in contact with the refrigerant pipe. Schenk teaches a refrigerator (referring to figure 1) that includes an evaporator (30) having fins disposed around the refrigerant pipe (illustrated in figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the evaporator of Kopko as modified by Kim and Chung to include the fins as taught by Schenk in order to increase heat transfer between the refrigerant and the air passing through the evaporator, thus increasing cooling efficiency.

8. Claims 12 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko in view of Kim, Schenk and Chung.

Regarding claims 12 and 22, Kopko discloses a refrigerator arrangement (referring to figure 2) comprising: a duct (59) in fluid communication with a freezer compartment (55) and a fresh-food compartment (56) via flaps (53, 54, 57, and 58) disposed adjacent to both of said compartments (illustrated in figure 2); wherein the duct includes an evaporator/refrigerant pipe assembly (52) and a motor driven reversing fan (51) capable of moving air in two directions, thus opening a first set of flaps (53 and 54) when the fan moves air in one direction and closing the first set of flaps when the fan moves air in another direction opposite the first direction (see column 4, lines 23-40; the fan blows air to the right and to the left, depending on the direction of

Art Unit: 3744

rotation of the fan). Also, Kopko further discloses that if the fan blows air away from the evaporator, flaps 53 of the freezer compartment will close off the freezer compartment to the space, and the space will be closed off to the freezer compartment (see column 4, lines 23-40). It is noted that the operation of the reversing fan is indicative that some type of driving means (i.e. a motor) controls the rotation of the fan. Also, it is noted that the recitations “so that the opening or closing between the space and the refrigerating chamber and the space and the freezing chamber are performed by the open/close device,” “so that the cold air is directed into the refrigerating chamber and /or the freezing chamber during cooling,” and “so that a heat transmission from the defrosting heater to the refrigerating chamber and/or freezing chamber is prevented during defrosting by an operation of the defrosting heater” are merely statements of intended use and lends no additional structure to the claimed invention, and the applicant is reminded that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here. However, Kopko fail to disclose a defrost heater positioned within the duct; and that the refrigerant pipe includes a plurality of fins; and that both the first and second open/close devices open the space to both the refrigerator and freezer compartment when the fan rotates in one direction and both the first and second open/close devices closes the space when the fan is rotated in the opposite direction. Kim teaches a refrigerator (referring to figure 3) that includes an evaporator (11), a fan (15), and a defrost heater (17) disposed within a duct (illustrated in figure 3), wherein the defrost heater is selectively operated in a defrost operation (see column 1, lines 55-58). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have

Art Unit: 3744

modified the refrigerator of Kopko to include the defrost heater as taught by Kim in order to prevent excess frost buildup on the evaporator, thus preventing the reduction in cooling efficiency due to the frost buildup. Schenk teaches a refrigerator (referring to figure 1) that includes an evaporator (30) having fins disposed around the refrigerant pipe (illustrated in figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the evaporator of Kopko as modified by Kim to include the fins as taught by Schenk in order to increase heat transfer between the refrigerant and the air passing through the evaporator, thus increasing cooling efficiency. Schenk teaches a refrigerator (referring to figure 1) that includes an evaporator (30) having fins disposed around the refrigerant pipe (illustrated in figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the evaporator of Kopko as modified by Kim to include the fins as taught by Schenk in order to increase heat transfer between the refrigerant and the air passing through the evaporator, thus increasing cooling efficiency. The general concept of designing a refrigerator to have a freezer compartment disposed above a refrigerator compartment and having airflow that flows from a space to both the refrigerator compartment and freezer compartment in series falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Chung which teaches a refrigerator (referring to figure 1) having a freezer compartment (2) disposed above a refrigerator compartment (3) and having airflow (see arrows) that flows from a space (5) to both the refrigerator compartment and freezer compartment in series (illustrated in figure 1: via port 7), and one having ordinary skill in the art would have been motivated to include the use of a refrigerator of this configuration in order to make the refrigerator portable and fit in confined spaces. It is noted that given the refrigerator

Art Unit: 3744

arrangement of Chung, the fan, and flaps 57 & 58 of Kopko would be placed in respective locations (i.e. the area of fan 6A and directly upstream of evaporator 4 where ports 9 and 9A join of Chung) in Chung.

9. Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk and Chung as applied to claim 12 above, and further in view of Carlstedt.

Regarding claims 13 and 20, Kopko as modified by Kim, Schenk and Chung teach all the limitations as described above, but fail to teach a hot wire that functions as a resistance body connected to a power source for emission of heat; a film of an electrical insulating material surrounding the hot wire; and wherein at least a portion of the plurality of fins have insertion slots in side surfaces configured to receive the defrost heater. Carlstedt et al. teach the concept of providing an evaporator (10) having a tubular element (12) disposed within fins (14) of the evaporator (10); wherein the tubular element includes a bent electric cable (20) for defrosting an evaporator (see abstract); wherein electric current is conducted through a resistance wire (24; see column 2, lines 3-5), having a thin film (insulation 26) surrounding the resistance wire (illustrated in figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the refrigerator of Kopko as modified by Kim, Schenk and Chung to include the defrosting arrangement as taught by Carlstedt order to prevent ice buildup on the evaporator from clogging the cold air duct, thus increasing cooling efficiency.

Art Unit: 3744

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk, Chung and Carlstedt as applied to claim 13 above, and further in view of Lindseth (US 2,000,467).

Regarding claim 14, Kim, Schenk, Chung and Carlstedt teach all the limitations as described above, but fail to teach that the hot wire is a carbon hot wire. Lindseth teaches the well known concept of a heating element being made of carbon (see column 2, lines 35-38). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the hot wire of Kopko as modified by Kim, Schenk, Chung and Carlstedt to include the carbon as taught by Lindseth in order to reduce the noise generated by the power source and to withstand higher tolerances, thus increasing heating efficiency.

11. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk, Chung and Carlstedt as applied to claim 13 above, and further in view of Komatsu (US 5,594,585).

Regarding claims 15 and 16, Kopko as modified by Kim, Schenk, Chung and Carlstedt teach all of the limitations of the claimed invention, but fail to teach that the film is formed of PET material and wherein the defrosting heater is a PTC device. Komatsu teaches the concept of using a positive temperature coefficient thermistor (PTC) heater as a heating device (column 3, lines 41-46) and laminating the PTC heater with a PET film (column 3, lines 46-49). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the film of Kopko as modified by Kim, Schenk, Chung and Carlstedt to be made of the PET material as taught by Komatsu in order to prevent the while of the cold air duct from

Art Unit: 3744

being heated, thus increasing cooling efficiency. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced the defrost heater of Kopko as modified by Kim, Schenk, Chung and Carlstedt with the PTC device as taught by Komatsu in order to regulate the defrost temperature without a temperature control circuit, thus increasing efficiency.

12. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk and Chung as applied to claim 12 above, and further in view of Kobayashi et al. (Kobayashi, US 4,369,350).

Regarding claims 17 and 18, Kopko as modified by Kim, Schenk and Chung teach all the limitations as described above, but fail to explicitly teach that the defrost heater is attached to at least one side of the plurality of fins. Kobayashi teaches an evaporator for a refrigerating device (referring to figures 7-9) that includes refrigerant tubing (9), a plurality of fins (8), wherein a heater (10) is attached to the fins (illustrated in figure 9) for defrosting purposes (see column 3, lines 50-61). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the evaporator of Kopko as modified by Kim, Schenk and Chung to provide a defrost heater that is attached to a surface of the fins as taught by Kobayashi in order to provide quicker heating of the evaporator to melt the frost, thus preventing degradation of cooling efficiency.

Art Unit: 3744

13. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk and Chung as applied to claim 12 above, and further in view of Seipp et al. (Seipp, US 4,369,350).

Regarding claim 19, Kopko as modified by Kim, Schenk and Chung teach all the limitations as described above, but fail to teach that the defrost heater has pass through holes for the at least one refrigerant pipe. Seipp et al. teaches a heat exchanger defrost apparatus [see figure 3] that includes a defrost heater (20) thermally connected to a plate (15), wherein the plate has perforations (25) for the heat exchanger tubes to pass therethrough [see column 2, lines 33-36]. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the evaporator of Kopko as modified by Kim, Schenk and Chung to include the defrost heater arrangement as taught by Seipp in order to provide quicker heating of the evaporator to melt the frost, thus preventing degradation of cooling efficiency.

14. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk and Chung as applied to claim 12 above, and further in view of Reed (US 2,191,774).

Regarding claims 23-25, Kopko as modified by Kim, Schenk and Chung teach all the limitations as described above, but fail to teach that the flaps comprise a supporting plate having a plurality of openings; a plurality of thin rotating plates each having one side coupled to the supporting plate by a hinge, and the other side rotatable upward by a predetermined angle to open the openings; and wherein the rotating plate covers an upper circumference of the respective opening to close the opening. Reed teaches a vane assembly (referring to figure 1)

Art Unit: 3744

that includes a plurality of vanes (11) disposed downstream of a vent (1) and connected to a tie rod (14) via an axis (12) and a lever (13); wherein openings between the vanes are created when a predetermined amount of air is sucked through the vanes (illustrated in figure 1 and see column 2, lines 37-55), and when the vanes are closed, a portion of the vanes can lie onto an adjacent vane (see column 3, lines 51-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced the flaps of Kopko as modified by Kim, Schenk and Chung to include the vane assembly as taught by Reed in order to provide increased directing of airflow, thus reducing air turbulence within the duct.

Response to Arguments

Applicant's arguments with respect to claims 1, 3-20 and 23-25 have been considered but are moot in view of the new ground(s) of rejection. It is noted that in the applicant's remarks (see pages 9-14), the applicant has not presented arguments directed to the claimed limitations (more specifically, independent claims 1 & 10) of the claims. Therefore, the rejections are properly upheld.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AZIM RAHIM whose telephone number is (571) 270-1998. The examiner can normally be reached on Monday - Thursday 7am - 3pm EST and Friday 7am - 9:30am EST.

Art Unit: 3744

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. R./

Examiner, Art Unit 3744

9/15/2010

/Frantz F. Jules/

Supervisory Patent Examiner, Art Unit 3744